



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-7B27/2  
UNIQUE ID NUMBER: 4CM043  
COMBUSTOR:  
ENGINE TYPE: TF

BYPASS RATIO: 5.0  
PRESSURE RATIO ( $\pi_{00}$ ): 28.8  
RATED THRUST ( $F_{00}$ ) (kN): 121.4

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	13.1	82.7	40.5	0.8
AS % OF ORIGINAL LIMIT	66.7	70.1	41.5	3.7
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			51.8	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			62.2	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			70.6	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			83.5	

### DATA STATUS

- PRE-REGULATION  
x CERTIFICATION  
- REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
- DEDICATED ENGINES TO PRODUCTION STANDARD  
- OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
(ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)

x OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	1.265	0.05	0.54	20.81	0.8
CLIMB OUT	85	2.2	1.033	0.06	1.97	15.59	0.7
APPROACH	30	4.0	0.351	4.21	24.28	7.53	0.7
IDLE	7	26.0	0.115	5.56	38.73	4.36	0.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			453	1363	9291	4648	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				11.2	76.5	38.2	0.8
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				10.1-12.3	72.7-80.4	37.9-38.8	0.3-1.6

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.9-98
TEMPERATURE (K)	292.8-296.7
ABS HUMIDITY (kg/kg)	0.00814-0.0131

### FUEL

SPEC	Jet A
H/C	1.93-1.94
AROM (%)	18-19.2

MANUFACTURER: CFM International  
TEST ORGANIZATION: CFM56-7B Eval Engineering  
TEST LOCATION: Peebles Test Operation (PTO), Peebles, Ohio  
TEST DATES: 30/08/1997-12/09/1997

### REMARKS

1. FAA Certification Report CR-997/2, 14 Nov 97
2. Engine S/N 874-136/01, 874-141/01, 874-146/01

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)